



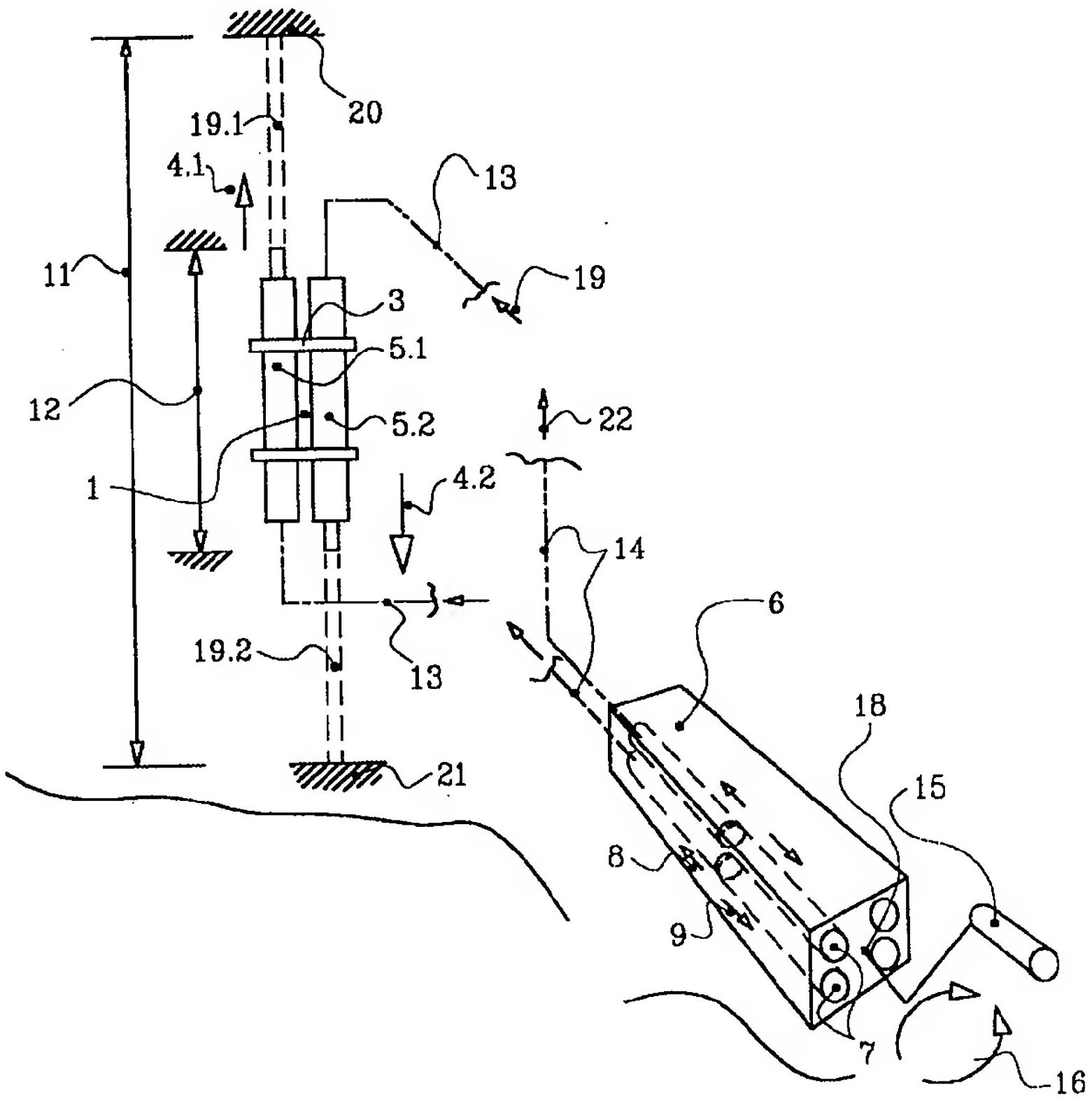
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(54) Title: TELESCOPIC ARRANGEMENT WITH DOUBLE STROKE

(57) Abstract

Telescopic arrangement (1), especially a hydraulic (14) arrangement, and especially for system of furniture, but also for other systems or arrangements (1), which shall be lifted (4.1/11, 4.2/11) or lowered (12). It contains a coupled (3) double stroke (4.1, 4.2) arrangement of cylinders (5.1, 5.2). The respective stroke of these cylinders (5.1, 5.2) is directed opposite to each other (19.1, 19.2). The opposite directed strokes could ideally move along the same line.



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Telescopic arrangement with double stroke

The invention relates to a telescopic arrangement, especially hydraulic, and especially for system of 5 furnitures, but also other systems or arrangements, which shall be lifted or lowered.

Hitherto have one by the system of elevating especially used of the branch of furnitures, where one 10 especially have to had strokes as an example over 35 cm, with an elevating of weight as an example from 100 kg and over that, used solutions of mechanical screw-spindles.

The disadvantage by this system is that it is very 15 expensive, complicated and complexed to use.

Hitherto have one also establish elevating systems via hydraulic. Where one then have had one cylinder there in its self has the whole stroke.

20 One of the disadvantage has here been that the lower minimum high has been limited, as the piston rod fully extended nessesary also must have an extra lenght of guiding/holding.

In the same time has the arrangement of pump for an 25 syncron elevating or lifting, especially if it has been made as a pump-unit of magazine cylinders, been impossible to made compact both according to the thikness as according to the stroke. As then the pump unit on a furniture, almost will be impossible to 30 place, because of now its outer extra nessesary larger size.

The system will morover also here be expensive to established.

35 The purpose with the invention is, to provide an arrangement for liftning or lowering of this in beginning mentioned sort or kind, where one obtain a

relative long stroke, with a relative large stationary as dynamic activated lift, establish of/by one in itself compact embodiment or arrangement of elevating.

5

The new of the invention is that the telescopic arrangement 1 especially can contain of a coupled 3 double stroke 4.1 and 4.2 arrangment of cylinders 2. Where the one 5.1 of the compact cylinder arrangements 2 is turning opposite the other, and with a diametrically opposite directed stroke 4.1 as 4.2. And where the "stroke" 4.1 or 4.2 according to the direction of movement or the direction of operation 4.1 as 4.2 ideal for that matter generally has a line 15 convergence.

With the new telescopic arrangement 1 according to the invention one can obtain that one compact and very easy can establish one in itself generally self guided and leaded unit 2 out of area of the elevating. Generally with standard components as an example hydraulic cylinders 5.1 as 5.2. And where one by a bulding together 3 according the invention extend the area of function of thies standard components 5.1 and 25 5.2 to a double lenght of stroke 11 with generally the same possibility of loading or limit, as for one cylinder 5.1 or 5.2.

The telescopic arrangement 1 will especially be 30 driven optimal, where one as an example use hydraulic. And where the system of pump 6 as an example is of the type magazine cylindres 7, which is couple togther "as bundles" 8 and 9. And for that matter ideal has been force guided synchronic 18 in the 35 stroke. As an example 2 cylinders 5.1 and 5.2 here in the same time 3 will be able to be driven or lifte

4.1 as lower 4.2 as an example a telecopic leg 10 or
a like unit 10.

The invention shall after this be explain neare in
5 the following according to the drawing, where

Fig.1 shows, seen in a generally perspective a
lifting/lowering system 5.1 and 5.2, where an arran-
gements of the hydraulic cylinder 5.1 as 5.2 is
10 established respectively as telescopic leg 10. And
where a pumping system 6 for that matter also a
shown. As the telescopic arrangement 1 or elevating
unit 1 here is made as 2 opposite pointing cylinders
5.1 as 5.2. Which in the telescopic arrangement 1 are
15 coubled 3 "floating" together by the houses of the
cylinders 5.1 and 5.2.

The stroke 4.1 and 4.2 of the arrangement 1 can be
seen indirect as a "maximum-stroke" 11, as opposite
20 as a "minimum-stroke" 12. As it clearly can be seen
that the minimal high 12 "only" almost is limited of
the high of the cylinder house 5.1 as 5.2. And if the
2 opposite pointing pressure cylindres 5.1 as 5.2 are
builed together 3 in the same niveau or plan as shown
25 on Fig.1, then will this establish an extrem low high
of build 11.

An optimum example on a pumping arrangement 6 accor-
ding to the invention is also shown in Fig. 1. As
30 there here are shown a magazine system 7 containing
of coubled and mutual forced guided 18 pumping
cylinders 7.

For the shown arrangement 2 is used 2 cylinders, here
35 indicated by its no. 5.1 as 5.2. As a forward con-
veying 8 as a backward conveying 9 in the house of

the pump 6 respectively will course an syncron lifting 4.1/4.2 or 11 as lowering 17. Especially if the dimension of the cylinders in the pump 6 as at the telescopic arrangement 1 generally are the same.

5 An ideal guiding or leading of the pipe-line 13 of the oil pressure pipe line 19 from/to each cylinder 5.1 as 5.2, will also ideal be able to be establish only as one pipe line 13 to/from each cylinder 5.1 as 5.2.

10

The pipe line 14 to/from lifting/lowering arrangement 1 to/form the pump arrangement 6 can be solid mounted or fixed to the telescopic arrangement 1. While thies 13 inside in the telescopic-arrangement 1, as the 15 present embodyment shows, shall be made or mounted as flexieble and loose movable.

On the pumping arrangement itself 6 in Fig.1 is shown an example on an activating arrangement 15. 16 and 20 18, here as a revolving handle 15. Where one then manual here shall turn 16 to activat the telescopic unit for lifting 4.1/4.2 as for lowering.

The system 1, 2 and 6 could also be establish motor 25 driven.

Fig.2 shows an activated and moved telescopic arrangement 1, with a shown embodyment with an ideal placing of the comming supplying lines or pipes 14 in 30 the top of the arrangement. And where the arrangement 1 for that matter is shown at its or under the maximum lenght of a stroke 11.

Fig.3 shows a compressed telescopic arrangement 1, 35 in its minimal high of stroke 12.

The house of the telescope 1, contain of here as an

example of 3 coubled and sliding shells or cases 17. Ideal made of aluminium, steel, plast or like. And where the cases 17 mutual are guided as an example via a covering of plast or like material of bearings.

CLAIMS

1. Telescopic arrangement (1), especially hydraulic (14), and especially for system of fixtures, but also other systems or arrangements (1), which shall be lifted (4.1/11 as 4.2/11) or lowered (12), **c h a r a c t e r i s t i c o f**, that it contains of a coupled (3) of a double stroken (4.1 as 4.2) arrangement of cylinders (5.1 as 5.2), where the one arrangement of cylinders (5.1 or 5.2) turn opposite the other, and with an opposite pointing stroke, and where the opposite turned strokes (4.1 or 4.2) in the direction of movement or the direction of the operation (19.1 as 19.2) ideal can have a line covering or a line convergence.

2. Telescopic arrrangement (1) according to claim 1, **c h a r a c t e r i s t i c o f**, that a joint coupled (3) arrangement of cylinders (5.1 and 5.2) is floating fixed (3) to or by each other diametrically opposite directed houses of cylinders (5.1 as 5.2).

3. Telescopic arrrangment (1) according to claim 1, **c h a r a c t e r i s t i c o f**, that an arrangement of lifting cylinders (5.1 and 5.2) ideal can be covered of one in itself guided, but following and in it self displacing telescopic mantle or housing or like arrangement (17).

30 4. Telescopic arrrangment (1) according to claim 1, **c h a r a c t e r i s t i c o f**, that the telescopic arrangement (1) or like (1) in its top (20) as its bottom (21), ideal can have an arrangement of mounting -or fixing for the diametrically opposite turned end of application of the cylinder

rods (19.1 and 19.2) or the end of the piston rods itself (19.1 as 19.2) or like.

5. Telescopic arrrangement (1) according to
5 claim 1, **c h a r a c t e r i s t i c o f**, that
lines or pipes (13) for the activating of the arran-
gement of lifting/lowering (4.1 as 4.2) ideal can be
mounted among here fixed and leaded in from the top
(20) as an alternative from the bottom (21) of
10 telescopic arrangement (1) or like (1), and that
thies or the pipes or lines (13) into the cap of the
telescop or like arrangement (17) under the opera-
tions (4.1 as 4.2) generally are flexieble and
movable.

15

6. Telescopic arrrangement (1) according to
claim 1, **c h a r a c t e r i s t i c o f**, that
where the means of power or energy is of hydraulic
kind (22), that there can each unit (5.1 as 5.2) of
20 an arrangement of a double strok cylinders(5.1/5.2)
ideal in the same time be syncronic activated (18/15-
/16), respectively be driven forward (4.1/4.2) as be
lowered (12) via an arrangement of pump (6), espe-
cially containing of more side by side in or as
25 laying magazines, syncronic and moved (8 as 9) in the
same direction, as activated (16) and hydraulic
cylinders (7) fixed together, especially ideal of the
same size and dimension, and with an activating
cylinder (7) for each dirementrally opposite turned
30 cylinder of telescop (5.1 as 5.2), and where thies
activating cylinders (7) for that matter ideal can be
forced guided together.

7. Telescopic arrrangement (1) according to
35 claim 1, **c h a r a c t e r i s t i c o f**, that a
mutually movable or displacable house of telescop

(17) or like arrangement (17) for units of lifting/-lowering (11/12) ideal can be guided or leaded in its or they mutual parts via a padding or with covering means or parts of material of bearings as an example
5 as plastic, metal or like.

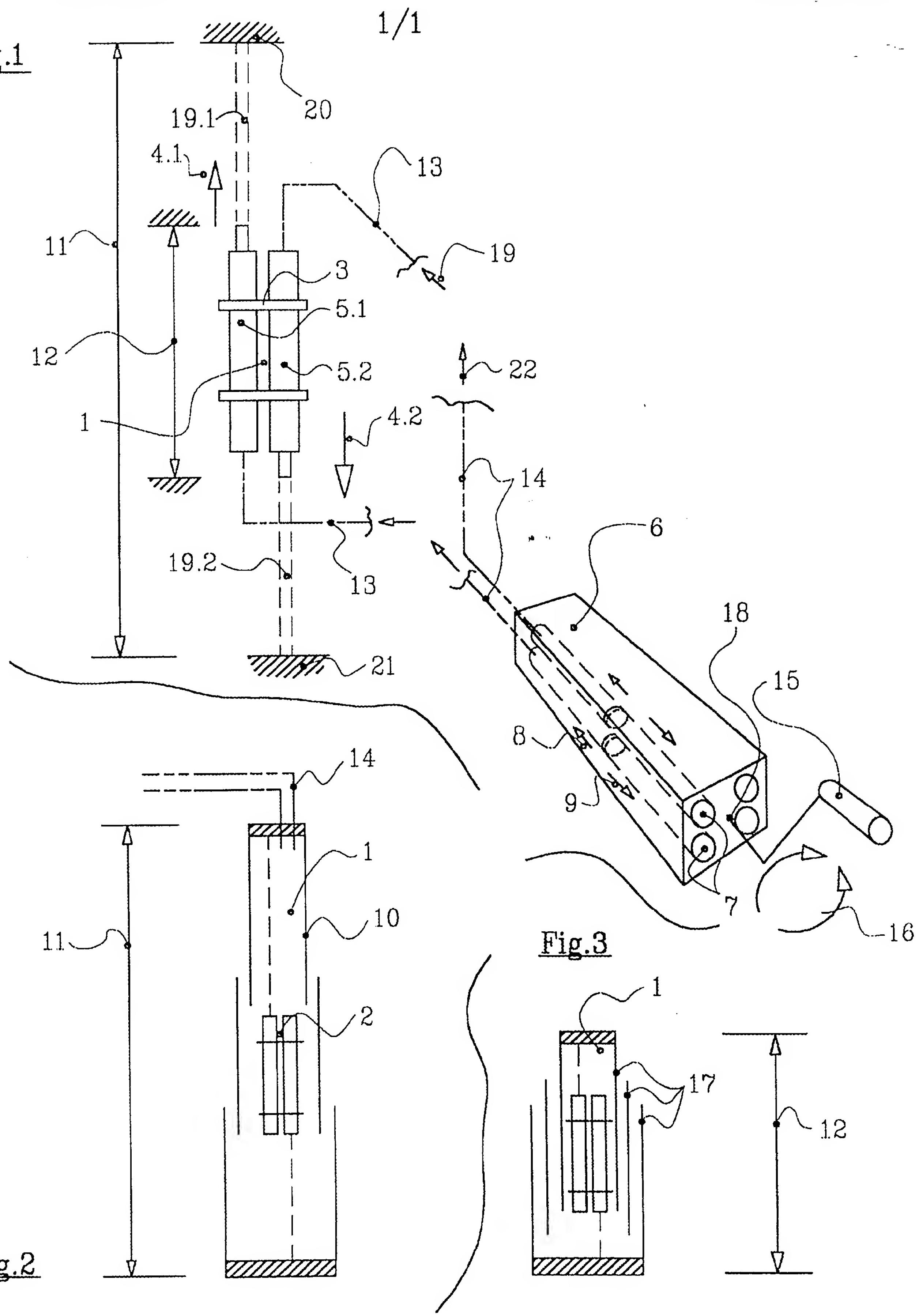
AMENDED CLAIMS

[received by the International Bureau on 8 July 1999 (08.07.99);
original claims 1-7 replaced by new claims 1-4 (2 pages)]

1. Method for integrated "ad hoc" stop arrangement (8 and 9) on especially telescopic elevating arrangement (1) with especially coupled (3) and driving together as opposit turning hydraulic elevating (4.1 and 4.2) cylinders (5.1 and 5.2), **c h a r a c t e - r i s t i c o f**, that stop as "ad hoc" locking arrangement for the driving together cylinders (5.1 and 5.2) has been establish and integrated qua an arrangement of position guided pumps (6).
2. Stop arrangement (8 and 9) for telescopic elevating arrangement (1) with opposit turned and simultaneous cylinder units (5.1 and 5.2) according to claim 8, **c h a r a c t e r i s t i c o f**, that the opposite turned as simultaneous cylinders (5.1 and 5.2) in a telescopic cylinder unit (1), ideal as an example can be activated for an exact mutual synchronous movement ahead, as return, as stop by a pump battery (6) with screw/nut-guiding or activating or like, and especially ideal with parallel mutual laying pump cylinders (7) for each cylinder unit (5.1 as 5.2) on/in the single unit of telescopic arrangement (1) or generally in an arrangement with two cylinder (5.1 and 5.2) for each telescopic unit (1).
3. Stop arrangement (8 and 9) for telescopic elevating arrangement (1) with opposit turned and simultaneous cylinder units (5.1 and 5.2) according to claim 8 as 9, **c h a r a c t e r i s t i c o f**, that the pump arrangement (6) for the telescopic unit of cylinder (1) can consist of a worm/screw guided arrangement of pump-cylinder (7), where a guided straight lined force (8 as 9) of this can be made indirect via a sledge/ pal guided yoke for each

arrangement of pump (6) of the telescopic unit (1).

4. Telescopic arrangement (1) with belonging
accessories according to claim 1, **c h a r a c -**
t e r i s t i c o f, that lines or pipes (13) for
the activating of the arrangement of lifting/lowering
and stopping (**4.1 as 4.2**) ideal can be mounted among
here fixed and leaded in from the top (20) as an
alternative from the bottom (21) of the telescopic
arrangement (1) or like (1), and that thies or the
pipes or lines (13) into the cap of the telescop or
like arrangement (17) under the operations (**4.1 as**
4.2) generally are flexieble and movable.

Fig.1

INTERNATIONAL SEARCH REPORT

International application No.

PCT/DK 98/00180

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: A47B 9/10, A47C 3/30, B25H 1/16 // A47B 9/20, A47C 3/40
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: A47B, A47C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2691889 A1 (SOCIETE JEANNEAU - CONSTRUCTIONS NAUTIQUES SOCIETE ANONYME), 10 December 1993 (10.12.93) --	1-7
A	SE 449044 B (ERIK HALLBERG), 6 April 1987 (06.04.87) --	1
A	US 5322025 A (SHERMAN ET AL), 21 June 1994 (21.06.94) --	1
A	US 5553550 A (DOYLE), 10 Sept 1996 (10.09.96) --- -----	1

 Further documents are listed in the continuation of Box C. See patent family annex.

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Date of the actual completion of the international search

10 February 1999

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT
Information on patent family members

21/12/98

International application No.
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2691889 A1	10/12/93	NONE	
SE 449044 B	06/04/87	SE 8402001 A	12/10/85
US 5322025 A	21/06/94	NONE	
US 5553550 A	10/09/96	CA 2145265 A	01/10/95